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FIELD MUSEUM OF NATURAL HISTORY

GENERAL GUIDE

CHICAGO, U. S. A.

1931

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OTHER PUBLICATIONS OF FIELD MUSEUM

In addition to this General Guide to the collections, Field Museum of Natural History has a series of special guides covering in detail certain sections of the exhibits. These special guides are more than mere direction books—they include much interesting, instructive and entertaining material on the subjects with which they deal.

A Handbook of Field Museum of Natural History, containing a comprehensive survey of the activities of the institution, with data on its history, organization, expeditions, endowments, etc., is available.

The Museum also publishes four series of Leaflets on scientific subjects, written in popular style. Twenty-nine such leaflets have been published in the Anthropological Series; sixteen in the Botanical Series; twelve in the Geological Series; and twelve on zoological subjects.

A Design Series is available, which is of particular value to those interested in design work, arts and handicrafts.

Scientific Publications of the Museum, of a more technical nature and primarily intended for distribution among other museums, libraries, and institutions of learning, are also obtainable by individuals.

Lists and prices of all the above may be had on application.

FIELD MUSEUM OF NATURAL HISTORY

FOUNDED BY MARSHALL FIELD, 1893

GENERAL GUIDE

FIFTEENTH EDITION

CHICAGO, U. S. A.

1931

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BY FIELD MUSEUM PRESS

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SUBJECT INDEX TO MUSEUM EXHIBITS

Floor Plans are shown on pages 8, 9 and 10.

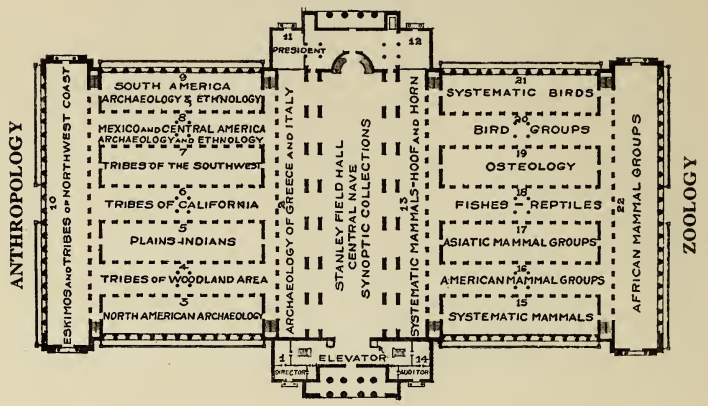
SUBJECT	HALL	PAGE
Africa—Ethnology	D	18
Africa—Game Animals	22	33
Alkalies	37	27
America—Large Mammal Groups	16	32
Amphibians	18	32
Asiatic Mammals	17	32
China—Archaeology	24	17
China—Ethnology	32	17
Birds—Habitat Groups	20	33
Systematic Collection	21	33
Central America—Archaeology and Ethnology	8	15
Clays	36	26
Coal	36	26
Crystals	34	24
Diamonds	31, 36	34, 26
Egypt—Archaeology	J	20
Textiles	J	20
Eskimo—Ethnology	10	16
Etruria—Archaeology	2	14
Fibers	28	22
Fishes	18	32
Flowers, Reproductions of	29	23
Food Products	25	21
Fossils	38	28
Gems and Jewels	31	34
Greece—Archaeology	2	14
Herbarium	Third Floor	23
Historical Geology	38	28
India—Ethnology	E	18
Indian Tribes—California	6	15
Great Plains	5	14
Mexico and Central America	8	15
Nomadic, of Arizona and New Mexico	6	15
Northwest Coast and Salish	10	16
Plateau and Woodland	4	14
Sedentary, of Arizona and New Mexico	7	15
South America	9	16
Insects	18	32
Ireland—Archaeology	2	14
Italy—Archaeology	2	14
Jade	30	17
Jewelry	31	34
Korea—Ethnology	E	18
Madagascar—Ethnology	E	18
Malaysia—Ethnology	G	19

SUBJECT	HALL	PAGE
Mammals—African, Game	22	33
American, Habitat Groups	16	32
Asiatic, Habitat Groups	17	32
Horned and Hoofed	13	31
Systematic Collection	15	31
Marine	N	33
Maps—Relief	35	25
Marbles	37	27
Marine Invertebrates—Fossil	38	28
Modern	18	32
Mayas—Archaeology	8	15
Melanesia—Ethnology	A	18
Meteorites	34	24
Mexico—Archaeology and Ethnology	8	15
Micronesia—Ethnology	F	19
Minerals—Systematic Collection	34	24
New Guinea—Ethnology	A	18
New Zealand—Ethnology	F	19
Ores of Precious and Base Metals	37	27
Oriental Drama	32	17
Pagoda Models from China	South Gallery	17
Paleontology	38	28
Palms	25	21
Peru—Archaeology	9	16
Petroleum	36	26
Pewter	23	17
Philippine Islands—Ethnology	H	20
Physical Geology	34, 35	24, 25
Plant Products	25, 28	21, 22
Plants, Reproductions of	29	23
Polynesia—Ethnology	F	19
Reptiles	18	32
Rocks—Systematic Collection	35	25
Sands	36	26
Siberia—Ethnology	E	18
Skeletons—Modern	19	32
Fossil	38	28
South America	9	16
South Pacific—Ethnology	A	18
Tibet—Ethnology	32	17
Trees—North American	26	22
Woods—North American	26	22
Foreign	27	22

General exhibits and important recent additions are to be found in Stanley Field Hall—see page 12.

	PAGE
Introduction	11
General Museum Information	35

FIRST OR MAIN FLOOR



Index to Halls

2—Archaeology of Greece, Italy and Ireland—Edward E. and Emma B. Ayer Hall and Alcoves

3—North American Archaeology—Mary D. Sturges Hall

4—Ethnology of Indian Tribes of the Woodland and Southeastern Area—James Nelson and Anna Louise Raymond Hall

5—Ethnology of the Indian Tribes of the Great Plains

6—Ethnology of the Indian Tribes of California and Nomadic Tribes of Arizona and New Mexico

7—Archaeology and Ethnology of Southwestern United States

8—Archaeology and Ethnology of Mexico and Central America

9—Archaeology and Ethnology of South America

10—Ethnology of Eskimo and Indian Tribes of the Northwest Coast of America

13—Horned and Hoofed Mammals—George M. Pullman Hall

15—Mammals—Systematic

16—American Mammals—Habitat Groups

17—Asiatic Mammals—Habitat Groups—William V. Kelley Hall

18—Fishes, Reptiles, Amphibians and Insects—Albert W. Harris Hall

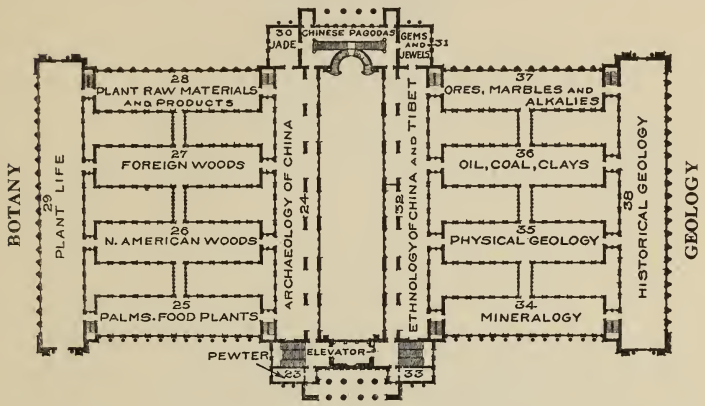
19—Osteology—Skeletons

20—Birds—Habitat Groups

21—Birds—Systematic

22—African Game Animals—Carl E. Akeley Memorial Hall

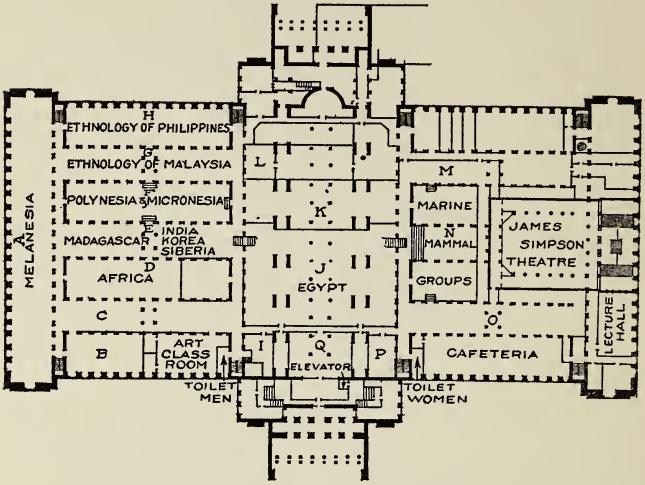
SECOND FLOOR



Index to Halls

23—Pewter
24—Archaeology of China
25—Palms—Food Plants
26—North American Woods—Charles F. Millspaugh Hall
27—Foreign Woods
28—Plant Raw Materials and Products
29—Plant Life
30—Chinese Jade
31—Gems and Jewels—H. N. Higinbotham Hall
32—Ethnology of China and Tibet, Chinese and Tibetan Dramatic Performances
34—Systematic Minerals, Crystals, Meteorites
35—Relief Maps, Systematic Rocks, Physical Geology—Clarence Buckingham Hall
36—Petroleum, Coal, Clays, and Sands
37—Ores of Precious and Base Metals, Marbles, Alkalies—Frederick J. V. Skiff Hall
38—Historical Geology—Ernest R. Graham Hall

GROUND FLOOR



Index to Halls

A—Melanesia, South Pacific—Joseph N. Field Hall
D—Ethnology of Africa
E—Archaeology and Ethnology of India, Siberia, Korea, Madagascar
F—Ethnology of Polynesia and Micronesia
G—Ethnology of Malaysia
H—Ethnology of Philippine Islands
J—Archaeology of Egypt
N—Marine Mammal Habitat Groups (open but incomplete)

The James Simpson Theatre, the Lecture Hall, cafeteria and lunch rooms, and men's and women's lavatories are on this floor.

BRIEF GENERAL GUIDE TO THE COLLECTIONS

Introduction

Field Museum of Natural History was established in 1893. The founding of an institution of this importance and character was made possible by the late Marshall Field, who, in addition to his original gift of $1,000,000, made further gifts of approximately $430,000 during his life, and bequeathed on his death in January, 1906, a further sum of $8,000,000, of which $4,000,000 was allotted toward the erection of the present building, located in Grant Park, and $4,000,000 toward endowment.

The Museum is incorporated under State Law, and its active control rests in the Board of Trustees, with President, Secretary and Treasurer. The executive of the Museum is the Director, under whom there are five Curators and many divisional Associate and Assistant Curators, preparators, etc.

The Museum building is 706 feet long, 438 feet wide, 104 feet high, and, with the terrace and grounds surrounding it, occupies an area of about eleven acres. The central hall, Stanley Field Hall, is 299 feet long, 68 feet wide, and 75 feet high. The rest of the building is divided into four floors. Of these, the main and second, and a portion of the ground floor, are devoted to exhibition purposes; the remaining space serves as working quarters for the administrative and scientific staffs and the maintenance force. The exterior, which is of white Georgia marble, is treated in monumental manner based on Greek architecture of the Ionic order. The principal fronts are divided into a large pedimented central pavilion, with two long wings terminated by a smaller pavilion at each end. A notable feature is the terrace, which is sixty feet wide, and completely surrounds the building at a height of six feet above the surrounding level.

In this structure, the architects, D. H. Burnham and Company and Graham, Anderson, Probst and White, have given to Chicago and the nation a masterpiece of monumental building possessing distinction and dignity appropriate to its purpose and origin.

The main hall, which is dedicated to Stanley Field, President of the institution, contains four statues, designed by Henry Hering which symbolize the aims and purposes of the Museum. The figures flanking the north archway represent Natural Science and the Dissemination of Knowledge, while those at the south archway typify Research and Record.

Many of the halls in the Museum are named in honor of some of the persons who have made notable contributions or rendered valuable service to the institution.

STANLEY FIELD HALL

Occupying the Nave of the Building

The exhibits in Stanley Field Hall, into which the main entrance opens, are intended to illustrate the activities of the Museum as a whole and to serve as an introduction to the systematic collections assembled in the exhibition halls. Some of the exhibits in this hall are changed from time to time to show new acquisitions or the results of recent expeditions. The exhibits shown, as listed below, at the date of publication of this Guide, are typical of the contents of this hall.

In the center of the hall are two African elephants mounted in fighting attitude.

Toward the south end of the hall three bronze groups, the work of the late Carl E. Akeley, illustrate lion spearing by native Africans.

Case 1. Prehistoric American gold ornaments from Colombia and Ecuador, South America.

Case 2. Ancient Roman bronze bathtub, from Boscoreale, Italy.

Case 3. Prehistoric races of man, illustrated by restorations of the Pithecanthropus erectus, the Neanderthal man of La Chapelle-aux-Saints, and the Cro-Magnon man.

Case 4. Embroideries, chiefly women's dresses, from western India.

Case 5. Marine fauna. Various types of beautiful and characteristic marine animals, such as sponges, precious corals, sea urchins, and shells.

Case 6. Pottery and porcelain of the Sung period (eleventh to thirteenth century), China.

Case 7. Selected examples of Chinese art, represented by ancient ceramics, bronze, the figure of a zebu in cast solid silver, four clay figures of women engaged in a polo match, and a gilt bronze figurine of a recumbent rhinoceros.

Case 8. Gold and silver jewelry, India.

Case 9. Resins. This case, together with two others in Hall 28, Department of Botany, contains one of the finest collections of resins known.

Case 10. An iron meteorite, weighing 3,275 pounds. It is remarkable for its large size and symmetrical form. It was found in 1908 near Tonopah, Nevada.

Case 11. Antiquities of the early Sumerian period (about 3500 B.C.) excavated from the ancient city of Kish, Mesopotamia. A copper rushlight, copper implements and vessels, bowls of alabaster and other stones, necklaces and shell beads.

Case 12. A scepter of good luck carved from sandalwood presented by Grow and Cuttle; two lacquered cabinet doors painted with scenes in gold lacquer and a painting representing a ladies' garden party in China.

Case 13. Varieties of quartz. The remarkable range of color and form of this mineral is illustrated.

Case 14. A group of epiphytic and parasitic plants growing about a termite nest built at the tip of a branch of a tree in the tropics. From Demerara River, British Guiana. Reproduced from nature in the Stanley Field Plant Reproduction Laboratories of the Museum.

Case 15. Passenger pigeons in a characteristic and natural setting. These birds, once common, are now extinct.

Case 16. Chinese tapestries and cut velvets.

Case 17. Modern and ancient allied plants and animals. They are shown in both modern and fossil forms. Types known as "immortal," "persistent," "dwindled," etc., are illustrated.

Case 18. A single crystal of beryl weighing a thousand pounds.

Case 19. Birds of Paradise. Selected examples of the most curiously and gorgeously plumaged group of birds from the Island of New Guinea.

Case 20. Selected antiquities from Kish, Mesopotamia.

Case 21. Wood and foliage of the three principal species of mahogany.

Case 22. The history of the horse family, showing the evolution of the horse from a four-toed animal to a one-toed animal.

Cases 23 and 24. In these cases in the south corners of the hall are displayed New Guinea feather masks on life-size cast figures.

Examples of exhibition cases used by the N. W. Harris Public School Extension of Field Museum of Natural History are displayed at the south end of the hall.

A bronze standard bearing the names of eighteen persons each of whom has given $100,000 or more to the Museum appears at the north end of the hall.

DEPARTMENT OF ANTHROPOLOGY

First Floor:—Halls 2–10
Second Floor:—Halls 23, 24, 30, and 32
Ground Floor:—Halls A–J

First Floor

Hall 2: Edward E. and Emma B. Ayer Hall. Archaeology of Etruria, Greece, Italy, and Ireland.—The main section of this hall is occupied by exhibits of Etruscan, Greek, and Roman antiquities in stone, bronze, iron, pottery, and glass. Eighteen reproductions of antique furniture are on bases along the sides of the hall. Three Faliscan painted sarcophagi from about 500 B.C. and a number of fresco paintings from Boscoreale, a village north of Pompeii, of the first century A.D., are especially noteworthy.

Hall 3: Mary D. Sturges Hall. North American Archaeology (*excepting that of the Southwest*).—It is customary to divide North America into twelve archaeological culture areas. This classification has been made on the basis of similarity of traits; for example, pottery, weaving, stone and copper artifacts, burials, and houses. These culture areas are represented as far as possible in geographical order. There are exhibits illustrating artifacts from the North and South Atlantic regions, eastern Canada, and the Iroquoian areas, as well as from the lower and middle Mississippi regions; that is, Arkansas, Ohio, Illinois, and Indiana. The richest culture of prehistoric North America is represented by the Hopewell Mounds of Ohio characterized by a high development of art in sculpture and design. There are two Ohio mound-altars, and a miniature model of the Serpent Mound. In the center of the hall is a group of three life-size Indians engaged in the manufacture of stone implements.

Hall 4: James Nelson and Anna Louise Raymond Hall. Tribes of the Woodland and Southeastern Areas.—In the southwest corner of this hall is a case of representative material from present-day tribes of the southeastern United States. The remainder of the southwest quarter is devoted to collections from the Iroquois, Ojibwa, and eastern Algonquian tribes. The culture of the peoples of the Rocky Mountain Plateau is shown in the southeast quarter with collections of costumes and woven bags. The life of the Woodland tribes is illustrated in the northern half of the hall and includes the culture and religious practices of the Potawatomi, a central Algonquian tribe, which formerly inhabited the Chicago region and is connected with its early history. In the center aisle are miniature groups illustrating the summer and winter life of the Sauk and Fox.

Hall 5: Indian Tribes of the Great Plains.—The life of these tribes centered about the horse and the buffalo. The exhibits begin with a life-size group showing a Crow woman and horse with full trappings. The southern half of the hall is devoted to clothing and adornments of the Cheyenne, Arapaho, and Crow. Their principal

religious observances are typified by exhibits of the paraphernalia of the Arapaho men's societies and by a Sun Dance Altar. In the northern half of the hall is illustrated the life of the Blackfoot, Ute, Bannock, Kutenai, Kiowa, Wichita, Arikara, Osage, and Dakota. The exhibits of Dakota bead and porcupine-quill work are especially noteworthy. Ceremonial objects of the Pawnee are shown in the northeast quarter, and the principal rites of the tribe are illustrated by miniature groups representing the Thunder Ceremony, Morning Star Sacrifice, Medicine-Men's Ceremony, and Purification of the Sacred Bundles.

Hall 6: Indian Tribes of California and Nomadic Tribes of Arizona and New Mexico.—The California tribes occupy the west half of the hall, being adequately represented by exhibits of ordinary and ceremonial costume, dance skirts and aprons, ornaments, implements, weapons, baskets, and games. Life-size figures of two Pomo medicine-men, one conjuring seed, another holding a ceremony over the deceased, stand near the west entrance of the hall. A representative collection of Navaho blankets, including some rare types, and of Navaho silver work are on view in the southeast section of the hall. On the northeast side are displayed a complete set of masks used by the Navaho Indians in the Night Chant Ceremony; basketry, household objects, games, and ceremonial paraphernalia of the Pima and Papago Indians of Arizona; as well as clothing, war, ceremonial and hunting equipment, and basketry of the Apache Indians of Arizona and New Mexico.

Hall 7: Archaeology and Ethnology of Southwestern United States (*Utah, Colorado, Arizona, and New Mexico*).—The south side of this hall is devoted to the ethnology of the modern Rio Grande and Hopi tribes. At the west entrance is a life-size group showing the interior of a Hopi house, illustrating various domestic pursuits. Full-size reproductions of several altars are on the southeast and northwest sides. In the center aisle are life-size Hopi figures of a boomerang thrower, a bride, and Katcina dancers in costume, as well as miniatures of the Hopi pueblos of Walpi and Hano. On the north side are collections which trace the development of the various cultures of the Southwest from earliest times (Basket-makers) through all the phases of Pueblo life down to historic times. In the hall are miniature models of important prehistoric pueblos and an actual size model of a kiva or ceremonial chamber.

Hall 8: Mexico and Central America.—In this hall are shown collections from Mexico and Central America, both archaeological and ethnological. The material is arranged, as far as possible, in geographical order. Case 1 in the northwest corner supplies the link to exhibits in Hall 7 by showing a collection of pottery from Casas Grandes, Chihuahua. The civilization of this region is closely allied to the Pueblo cultures in the Southwest of the United States. The rest of the north side of the hall is occupied by exhibits illustrating the archaeology of Mexico. Particular attention is drawn to the very fine smaller stone-work attributed to the Toltecs and Aztecs (Case 5). The Toltecs were a highly civilized people, who preceded the Aztecs and built up an empire rivaling in extent the mighty empire of the

Incas. In the southeast corner of the hall is shown a Zapotec collection from Oaxaca, southwest Mexico. The Zapotec culture supplies a link with the Maya civilization of Guatemala, British Honduras, and adjacent areas. The Mayas achieved the highest level of culture reached in the New World. Objects illustrating their civilization are exhibited in the adjoining cases. The casts displayed in the center of the hall were made from Maya monuments extant in Guatemala, Yucatan, and Honduras. In the center of this hall also are models of a large palace building of Mitla, Mexico, and of a pyramid at Uaxactun, Guatemala.

Farther on are shown collections from the areas lying between the ancient home of the Mayas and Panama. The southwest corner of the hall is occupied by collections illustrating the everyday life of the present Indians of the whole middle American region. In many cases these peoples are the lineal descendants of the tribes represented in the archaeological section. Despite more than four centuries of religious and political oppression, much of the old culture still remains, notably in wearing apparel. Large photos of famous Maya monuments are shown on the pilasters.

Hall 9: South America.—In this hall are represented the Indians of South America of the past and present. Exhibits representing the various modern tribes of South American Indians occupy the northwest section of the hall. Among the important collections are those from the Chaco Indians, the nomadic and equestrian warriors of the plains of northern Argentina; the Jivaro tribe in the forests of eastern Peru, represented by four examples of the artificially shrunken human heads; and a large collection illustrating the culture of the northwest Amazon, Orinoco Basin, and Guiana tribes. Among the most interesting exhibits are those showing the preparation of food from the poisonous mandioca tuber and the sacred trumpets used in initiation rites. The remainder of the hall is devoted to South American archaeology, and illustrates the high culture of the inhabitants of the west coast of South America in pre-Columbian days. The archaeology of Colombia is very well illustrated by fine collections of gold, pottery, and shell and stone-work. There are several cases of artistic pottery dating from pre-Inca times, dug up in the Chimu and Nazca districts on the Peruvian coast. The southeast section of the hall is devoted to the Inca culture, both as it was developed in the highlands and as it was on the coast. This collection includes a number of so-called mummies, which in fact are desiccated bodies, and fine textiles from the ancient cemetery at Ancon. The southwest section of the hall is given over to a representation of the little-known Calchaqui culture which flourished in early times in northwestern Argentina.

Hall 10: Eskimo and Tribes of the Northwest Coast of America.—Eskimo culture is illustrated in its wide geographical range, which extends along the shores of America from Labrador to northeastern Siberia. The dependence of the Eskimo on hunting and fishing is made clear by means of four life-size groups, located in the center aisle, showing an Eskimo hunter in his kayak, the chase

and capture of seal, preparation of skins, and winter fishing through a hole in the ice. On the southeast side of the hall are located the Eskimo collections. The remainder of the hall illustrates the life, religion, art, and industries of the tribes of the Northwest Coast and related interior groups. A single case, illustrating the life of the northern Athabascans of the Yukon Valley, deserves special mention, because of the excellence of the garments and the decoration in porcupine-quill work. The interior Salish tribes are represented in the southeast corner of this hall by ceremonial objects and a life-size group showing their home life and industries. In the bays separating Hall 10 from the transverse halls and against the south and northwest walls of the hall proper are erected totem poles and grave posts from the Northwest Coast tribes.

Second Floor

Hall 23: Pewter.—This hall contains the Edward E. Ayer collection of pewter comprising several hundred objects of pewter of European, Chinese, and Japanese origin, of all periods.

Hall 24: East Gallery, Archaeology and Ethnology of China.—The collections from China are intended to illustrate the development of Chinese civilization from its beginnings to the present time. There are two main divisions: the ancient, original culture of China prior to the intrusion of Buddhism, shown in the south half of the hall, and Buddhistic China, as influenced and modified by religious and artistic currents coming from India from the third century A.D. onward, in the north half of the hall. In each division, the principle of arrangement of the material is strictly chronological. The collection is particularly strong in archaic bronzes, cast iron, mortuary clay figures, armor and weapons, and Buddhistic and Taoistic sculpture. A collection of beautifully carved rhinoceros-horn cups is on exhibition.

South Gallery: A collection of eighty-four models of Chinese pagodas.

North Gallery: A fine, carved lacquer screen of twelve panels from China, eighteenth century.

Hall 30.—Jades, embroidered screen, paintings, and tapestries, China.

Hall 32: West Gallery, Archaeology and Ethnology of Tibet and China.—The north part of the hall contains collections from Tibet. Weaving and textiles, clothing in a series of costumed figures, and jewelry are fully represented. Images, paintings, sculpture, musical instruments, and other objects used in worship in the Lama temples are displayed in twelve cases. At the north end there are two cases illustrating the process of printing and wood engraving in China and Tibet. In the central portion of the hall are shown various Chinese industries, such as wood, bamboo and root carvings, lacquer, fans, bone and ivory carvings, basketry, musical instruments, tobacco, and a remarkable collection of beadwork. The south section of the hall is occupied by Chinese and Tibetan dramatic performances on which a special guide entitled *Oriental Theatricals* has been issued.

Ground Floor

Hall A: Joseph N. Field Hall. Melanesia, South Pacific.—This hall contains ethnographical material from Melanesia and New Guinea, regarded as the most comprehensive Melanesian collection in this country. At the north end are collections from New Britain and New Ireland, including large ceremonial masks and elaborately carved wooden figures. Next comes St. Matthias with peculiar types of decorated spears, clubs, clothing, and ornaments. The Admiralty Islands are represented by large wooden bowls, baskets, drums, carved figures, ornamented weapons, clothing, and personal ornaments. The central part of the hall is occupied by exhibits from New Guinea. Here may be seen a great variety of wood carvings, human and animal figures, masks, shields, bowls, and large wooden drums. Interesting types of ornamental designs can be seen on pottery, string bags, spears, and many other objects. Next come the island groups of the Solomons, New Caledonia, and the New Hebrides. Of special interest are the inlaid work in shell from the Solomons, the New Caledonian stone clubs, and the ancestral skulls from the New Hebrides.

Hall D: Africa.—The exhibits in this hall are arranged in geographical order, beginning with the Cameroon region of West Africa and extending through the Congo area and South Africa, thence along the east coast of the continent up to Somaliland. The section illustrated in greatest detail is that of Cameroon (Cases 1–14, on the north side of the hall), where skill in wood carving, bronze casting, and beadwork attain a standard unsurpassed in any other part of Africa. The finest examples of the woodworker's craft are displayed in the large wall case at the west end of the hall. This exhibit includes a series of door posts and window frames, along with such objects of household use as wooden beds and stools. In the center of the hall are three life-size figures of Cameroon medicine-men. These symbolize the main current of African thought, for they represent witch-doctors engaged in magical ceremonies which are deemed necessary to cure the sick, to make rain, and to appease the ghosts of ancestors. Cases 16 and 17 contain an excellent collection of bronzes as well as wood and ivory carvings from the West African city Benin, testifying to the high development of Negro art. Along the south side of the hall are exhibits representing warfare, handicrafts, and domestic articles of Congo Negroes, Zulus of South Africa, the warlike Masai of Kenya Colony, and the Somali tribes of Abyssinia. Numerous photographs in the cases illustrate the way in which the objects exhibited were made and used in the country of their origin. Other pictures have been selected for the purpose of giving an accurate impression of the many physical types represented by the races of Africa. A guide entitled *Ethnology of Africa* has been published by the Museum, and is on sale at the north entrance.

Hall E: India, Siberia, Korea, Madagascar (*temporary arrangement*).—The ancient civilization of India is represented by a small, but well-selected collection of early Buddhistic sculpture of the Gandhara period (first and second centuries A.D.). A few examples

of later Indian and Jaina sculpture are also displayed. The ethnology of India is illustrated by copper, brass, and bidri ware, as well as by carved and painted Singhalese masks from Ceylon. A tall brass temple-censer from Benares, symbolizing the seven worlds according to the Indian system of cosmology, occupies the center of the hall. The very primitive culture of the Andamans and Nicobars is shown in detail. The Ainu of both Yezo and Saghalin, and the Gilyak and Tungusian tribes of eastern Siberia are well represented with their characteristic fur and fish-skin garments and many good examples of their highly developed decorative art. The civilization of Korea is well illustrated by a unique series of magnificent court costumes, suits of armor, weapons, an iron mortar, two copper cannons, dresses of the people, household articles, and pottery.

The west half of this hall is occupied by a collection from Madagascar. The natives of Madagascar are of mixed Asiatic and African origin, and the exhibit forms a link between the African exhibits in Hall D and the Polynesian and Malayan exhibits shown in the adjoining halls to the south. This is the only Madagascar collection of any importance in the United States, and is believed to be the most complete in existence. It includes implements and utensils of all sorts, weapons, jewelry, wood carvings, ornamental iron work, textiles, and paintings. Much of the work has considerable artistic merit. The jewelry, wood carvings, and textiles are of especial interest. The textiles are woven from silk obtained from both wild and domestic silkworms, cotton, hemp, raffia, banana fiber, and the inner bark of trees. There is on exhibition a unique collection of raffia cloths decorated with elaborate designs made by the warp-dyeing process.

Hall F: Polynesia and Micronesia.—This hall contains collections from Fiji, Samoa, Tonga, the Cook Islands, Hawaii, New Zealand, and the Society and Marquesas Islands in Polynesia, and from the Gilbert, Caroline, and Marshall groups and various outlying islands in Micronesia. Of especial interest are the fine collections of painted bark-cloths and weapons from Fiji, Tonga, and Samoa. Noteworthy are carved ceremonial paddles and adzes from the Cook Islands. The New Zealand material illustrates well the culture of the ancient Maori. Jade implements and feather robes are prominent features of this exhibit which may be regarded as the best in the United States. The eastern end of the hall is occupied by a complete Maori council house from New Zealand, the only one in America and one of six in existence. This structure is sixty feet long and fourteen feet high. The front and all the wooden parts in the interior are covered with carvings and paintings in the best style of ancient Maori art. Among the objects from Micronesia the armor and tooth-edged weapons of the Gilbert Islanders and the curious weapons and implements from Matty Island are of especial interest. A tapa mosquito curtain from Fiji fills an entire case in the center aisle. A guide entitled *Ethnology of Polynesia and Micronesia* has been published by the Museum, and is for sale at the north entrance.

Hall G: Malay Peninsula and Malay Archipelago.—In the west section of this hall are illustrated the cultures of the Island of

Sumatra, chiefly represented by the Batak and Menangkabau (on the north side of the hall), the ethnology of Nias, a small island off the west coast of Sumatra, and of the Semang, Sakai, and Malay of the Malay Peninsula (on the south side of the hall). Exhibits from the Menangkabau are continued in the east portion of the hall, which in addition is devoted to the cultures of Java, Madura, Borneo, and Formosa. The entire process of making batik-cloth is illustrated and supported by many fine examples of batik fabrics. Puppets, masks, actors' head-dresses, actors' costumes, and the musical instruments of an orchestra accompanying performances testify to the high development of dramatic art in Java. There are four notable ancient stone sculptures from Java, and a remarkable collection illustrative of the life of the Dyaks of Dutch Borneo. The center of the hall is occupied by three groups—a miniature model of a Menangkabau village, a life-size Semang pigmy making fire, and a life-size Dyak hunter. Life-size figures of a Menangkabau bride and groom form a striking exhibit. Attention should especially be called to the numerous fine wood carvings and textiles in this hall.

Hall H: Philippine Islands.—The collections in this hall are so arranged as to emphasize the outstanding characteristics of the principal pagan groups throughout the archipelago. Comprehensive exhibits illustrate the economic and ceremonial life of the Tinguian. A miniature village of this people stands on the south side in about the center of the hall, while a life-size group pictures their most noteworthy industry—the forging of head-axes and spear-points. The Igorot are represented by two groups: one, a miniature village illustrating the daily life and activities of the people; the other, a life-size group showing the making of pottery. Suits of armor, cannon, and other weapons from the Moro are worthy of particular attention. At the east end of the hall is a group of Bagobo weavers consisting of six life-size figures engaged in preparing and weaving Manila hemp.

Hall J: Archaeology of Egypt.—Human mummies and coffins ranging in date from the tenth dynasty to the Roman period (i.e. from about 2300 B.C. to A.D. 200) are assembled in built-in cases along the north wall of this hall. X-ray photographs of some of the mummies are shown in a case near-by. Painted linen shrouds from late Egyptian mummies occupy the ends of the north wall cases. The backs of these cases are covered with textiles, large hangings, and parts of decorated garments of the Coptic period. Other Coptic garments and ornamental tapestries and embroideries occupy a built-in case on the south wall. East of them are mounted manuscripts on papyrus. Another case on the south wall contains a group of stelae. On the east wall and the wall north of the west stairway are displayed tomb-sculptures and paintings. This exhibit includes a statue of the goddess Sekhmet. Two complete tomb chapels of the Old Kingdom have been erected in the northwest corner. There also stand three late sarcophagi of red granite, black granite, and marble, respectively. The largest case in the hall, under the west stairway, contains a wooden boat almost four thousand years old, found buried beside the

pyramid of King Sesostris II at Dahshur. A prehistoric Egyptian body, buried long before mummification was practised, is shown in a burial pit, surrounded by pottery. Other exhibits are devoted to statuettes in stone, bronze and wood, ushebtis, offering-tables, tomb and memorial tablets, alabaster and other stone vases, pottery, faience and glass, jewelry, toilet articles, charms, beads, tools, weapons, wooden furniture, mummified animals, etc. All the foregoing are original objects. Reproductions shown include only the famous Rosetta Stone, the elegant papyrus of Ani, and certain important tomb and temple sculptures the originals of which are still in place in Egypt.

DEPARTMENT OF BOTANY

Second Floor:—Halls 25–29

Hall 25: Palms. Food Plants.—The north side of this hall is devoted to a display of palms and their economic products. The collection includes palm material from almost all tropical parts of the world. It contains many unusual and interesting specimens, such as the so-called double coconut of the Seychelles Islands, which has the largest seed in the plant kingdom. There are also numerous entire bunches of fruit among which those of the South American Mauritia and Attalea palms are notable for their large size. Most impressive of all for its large size is the fruit cluster of a sago palm which occupies a case in the central aisle. A case is given to the display of the enormous leaf stems characteristic of the larger palms in which the entire length of a leaf may be as much as forty feet. A spiny palm from Surinam occupies a case in the center of the hall.

Palms furnish many of the necessaries of life in the tropics, yielding edible fruits such as dates and coconuts, edible oils, sago, sugar, and drinks, fermented and unfermented. The stems are used in the construction of dwellings, the leaves for thatching, basket-making, and for hats, mats, etc., and their fibers are utilized for making ropes and textiles.

The south side of the hall is occupied by food products of vegetable origin. Particular attention is given to the small grains and corn with their products, bread and alimentary pastes, including macaroni. There are extensive exhibits also of starches, sugars, edible oils and fats, leguminous seeds, tea, coffee, spices, and nuts.

The principal grains such as wheat, rice, and rye, are exhibited, and, in more detail, heads of the chief wheats and barleys of the United States with the United States government grain standards. Alongside of the recent grains are also samples of ancient barley and wheat from Mesopotamia reputed to be 4,000 years old, and of wheat from the pyramids of Egypt. A miniature mill illustrates the modern process of flour making, and various samples show the steps in manufacture and characteristics of the chief commercial grades of flour. The five main types of corn are displayed. Ancient corn from the mound builders, cliff dwellers, and Peruvian burials is also shown. Products manufactured from various small

grains, and a detailed exhibit of those from corn kernels, are displayed. The latter are shown with material illustrating the steps in their manufacture.

Cane and beet sugar, in an exhibit illustrating various steps in manufacture, are shown together with sugar in various forms from native markets of many countries. Edible vegetable oils, domestic and foreign, are displayed with the seeds or fruits from which they are obtained. The chief commercial starches of the world are shown in conjunction with their respective plant sources. Leguminous seeds from various countries give an idea of the many varieties that are used for food. Exhibits of spices and nuts furnish an interesting study in plant geography. There is a large variety of tea and coffee, together with an exhibit of the New York Coffee Exchange standard of grading. Enlarged photographs portray the principal steps in the production of these commodities. There remain to be added to the exhibits in this hall various other beverage materials such as cacao, maté, guaraná, and cassine tea, as well as a display of the principal food plants generally spoken of as vegetables. The chief edible fruits are represented throughout the botanical exhibits in Hall 29.

Hall 26: Charles F. Millspaugh Hall. North American Woods.—The exhibits in this hall represent the principal trees and woods of North America. They are arranged in the order of their botanical relationship, beginning with the conifers which are at the northwest end of the hall. Each exhibit includes a part of the trunk of a tree, a transverse or cross section of a trunk, and one or more boards representative of the typical grain and appearance of the wood. Generally there is a quarter-sawed board and a flat-grained one. These specimens are supplemented by photographs of the living tree under summer and winter conditions, and of a branch in fruit or flower; a map to indicate the area of distribution; and a descriptive label summarizing the principal characteristics of the tree, and properties and uses of the wood.

Hall 27: Foreign Woods.—The exhibits in this hall are being rearranged and much of the present installation is temporary. The cases are arranged in geographical order and contain representative woods of the Philippine Islands, Japan, India, Johore, Australia and various countries of Central and South America. Of the new exhibits the most noteworthy are those of Paraná pine and embuia, the principal commercial woods of the Amazon valley, a display of Japanese woods, and a case containing a series of tropical woods from various countries showing a wide variation of color, texture and figure. In the central aisle of this hall is a trunk of Guatemalan cow tree which, when incisions are made in the bark, exudes a creamy white sap, resembling milk.

Hall 28: Plant Raw Materials and Products.—On one side of this hall are displayed fiber plants such as cotton, hemp, flax, jute, manila hemp, sisal hemp, and their products. On the other side are shown varnish resins, lacquers, and lac, wood distillation products, resin and turpentining methods, paper pulp products, cork,

tanning materials, dyestuffs, rubber, gums, waxes, perfume and flavoring oils, paint oils, soaps, tobacco, and a variety of crude drugs.

Wherever possible a specimen or a photograph of the fiber plant, or the part of the plant that yields the raw material for fiber making, is shown in connection with stages in the preparation of the fiber. Articles made from the fiber, such as mats, and rope, are displayed in the same case. There are separate exhibits of basketry, broom and hat making materials.

The display of resins is unusually fine. Wood distillation, although an old industry, has very recently made distinct improvements in methods and the number and value of its products. These are shown in detail.

Vegetable dyes and tans are of interest not only because of their industrial application but also from a botanical and ethnological standpoint. There are exhibits also of tobacco products, medicines, rubber, soap, perfume, paper and cellulose products, etc.

Hall 29: Hall of Plant Life.—The exhibits here are designed to furnish a general view of the range of plant life. Beginning at the northeast corner of the hall, the lowest order of plants, the bacteria, is followed by the algae, fungi, mosses, and other flowerless plants, recent and extinct; next are the conifers, then the flowering plants, which occupy most of the hall. Most noteworthy of the exhibits are the flowering and fruiting top of a coconut palm, at one end of the hall, and at the other a trunk of the curious cannon-ball tree of Guiana, with orchid-like flowers and large globular fruits. Other interesting plants represented are pepper, breadfruit, the giant waterlily known as Victoria regia, pitcher-plants, citrus fruits, pineapple plant, mahogany, poison ivy, mango, cacao, cacti, mangrove, chicle or sapodilla, coffee, banana, vanilla and other orchids, and various wild flowers of the United States. The hall is not complete, and new exhibits are being added continually.

Because of the fact that plants cannot be so preserved as to give a satisfactory representation of their appearance in the living state, most of the exhibits in this hall are reproductions made in the Stanley Field Plant Reproduction Laboratories of the Museum. These are made by skillful employment of materials such as glass, wax, celluloid, etc. Plants collected in the field serve as models for these accurate reproductions.

Third Floor: The Herbarium.—In rooms over Hall 25 are installed the large study collections, consisting of an herbarium of the plants of Illinois, the famous Harper collection of fleshy fungi, and a general herbarium containing in all more than 635,000 specimens. The herbarium is especially rich in plants of tropical America.

Study Collection of Woods and of Economic Plant Materials.—On the third floor also is a classified study collection of authentically named woods numbering more than 10,000 specimens. It is especially rich in woods from tropical countries.

These third floor collections are accessible on request to persons particularly interested.

DEPARTMENT OF GEOLOGY

Second Floor:—Halls 34–38

Hall 34: Minerals, Crystals, Meteorites.—The east half of the hall is occupied by the systematic collection of minerals. In this collection the specimens are grouped according to their chemical composition. Beginning at the east end of the hall, the minerals which are native elements are shown first, then follow mineral sulphides, haloids, oxides, carbonates, silicates, phosphates, etc., in order. The series ends with the hydrocarbons. Large specimens are for the most part installed in separate cases among which are dispersed pyramidal cases used for smaller specimens. Minerals such as realgar and proustite, which fade or change color on exposure to light, are covered by boxes which can be raised for examination of the specimens by pressing a button situated just outside of and below the sash.

Since quartz and calcite are among the most abundant of minerals, five cases are devoted to quartz and its varieties and three to calcite. A single case at the east end of the hall contains specimens illustrating a number of the characteristic features of agate. The various species of mica occupy a single case. At the end of the series is shown a large collection of pseudomorphic minerals. There is also an exhibit of radiographs made by a number of different species of radioactive minerals. The William J. Chalmers Crystal Collection follows. This collection illustrates, by means of carefully selected mineral specimens, the systems according to which minerals crystallize, and the varying development of crystal form in each system. Many types of twin crystals and other crystal groupings are illustrated, as well as various features of crystal growth, such as zone structure, inclusions and phantoms. Many of the crystals are of gem quality and would have been cut for gems but for their preservation in this collection. The series of tourmalines is especially remarkable for the variety of colors and forms shown. A case of amber and one of ornamental minerals supplement the mineral collection.

Following these, thirteen cases are devoted to the exhibition of one of the largest collections of meteorites in the world, in fact the largest as regards the number of falls represented. More than two-thirds of all known meteorite falls are represented by specimens in this collection. Some of the specimens are in the form of polished or etched slabs, which display the interior structure of meteorites, while others are unbroken and show how the meteorites appeared when picked up immediately after their fall. The larger specimens are installed in individual cases. The meteorite of greatest size thus shown is an iron meteorite weighing 3,336 pounds. The exhibit also contains two of the largest known individual stone meteorites, one being the largest ever seen to fall and the other the largest ever found. Over two tons of meteorites from the famous locality at Canyon Diablo, Arizona, including one weighing 1,013 pounds, are shown. Etched faces on many of the specimens of iron meteorites illustrate the peculiar figures which distinguish these meteorites from terrestrial iron.

Hall 35: Clarence Buckingham Hall. Physical Geology, Rocks, Relief Maps.—The collections at the east end of the hall illustrate various phases of physical geology. These include specimens showing wear or erosion of rock by ice, wind and water, a great variety of forms of concretions and specimens illustrating such important groups as volcanic products, dendrites, tufas, veins and vein structures, faults, folds, joint and cave formations. Contorted and ropy lava surfaces from the Mount Taylor volcanic region in New Mexico, from Vesuvius and other well-known volcanoes, also volcanic bombs from France and New Zealand, are conspicuous among the volcanic specimens. There are also shown many examples of such oft-mentioned substances as volcanic ash, lapilli and tufas.

Many of the dendrites, which are branching, moss-like forms deposited by water seeping through cracks in rocks, are objects of delicacy and beauty. In the case illustrating rock structure, large specimens illustrating slaty cleavage are worthy of attention. In another case, specimens of ripple-marked sandstone, which display large surfaces ripple-marked by wave action in a long distant past, exactly as the sands of lake and sea shores of the present day are scored, are of unusual size and perfection.

Cave products occupy one case. While these consist largely of lime stalactites and stalagmites, other cave products, such as floor deposits and gypsum rosettes, are also represented. Caves of an unusual type in Utah which contain huge transparent gypsum crystals instead of the usual carbonate of lime stalactites are illustrated by a number of crystals which have been so installed as to reproduce the appearance of a cave. Artificial lighting of the exhibit serves to bring out the transparency of the crystals. A large fulgurite or "lightning tube," more than eight feet long, which was formed when lightning struck into an Indiana sand dune, occupies a case by itself. In an adjoining case, smaller fulgurites from other localities show the effects of lightning on both sand and rock.

Adjoining cases contain specimens illustrating glacial markings, rock weathering and concretions. Two large rock slabs, displayed on bases, show, in unusual perfection, the effects of glacial planing and grooving of rock.

A large specimen of lodestone, weighing 400 pounds, and having unusual magnetic power, is installed in such a manner as to permit visitors to test its magnetism.

A systematic collection of rocks, consisting of about 300 specimens of uniform size of all the important rock types, occupies eight cases.

A model of the Natural Bridge of Virginia is shown. Besides being a faithful reproduction of the bridge with the vegetation and other features, it illustrates a number of details of rock structure which occur on too large a scale to be satisfactorily shown by specimens.

The western half and somewhat more of the hall are occupied by a collection of relief maps, which show the topography of selected portions of the earth's surface. Some of these are representations of well-known scenic areas. Others illustrate the topography of states

and other political divisions. Portions of the earth's surface which are of unusual geological interest are also presented in relief. Of especial local interest is a group of relief maps of the region about Chicago, which show the distribution of land and water in this district during a number of stages following the glacial period. Against the west wall are two large relief maps of the United States. One shows the distribution of rainfall and the annual temperatures, and the other the area covered by the continental ice sheet during the glacial epoch.

Dominating the west end of the hall is a model, nineteen feet in diameter, of the visible hemisphere of the moon. It is much the largest and most elaborate representation of the moon's surface ever made. The characteristic volcanoes, plains, mountain ranges and other features of the moon are shown in their true positions and relative extent. In order to make the relief more distinct, the vertical scale of the model has been made about three times greater than the horizontal.

Hall 36: Petroleum, Coal, Clays and Sands.—The east end of this hall is occupied by petroleum exhibits, beginning with oil sands of the American oil fields, followed by crude petroleums, grouped geographically. A model illustrates the underground features of an oil field and the machinery by which the wells are drilled and the oil brought to the surface. A model of the original Rockefeller refinery at Cleveland is also shown. Numerous oils refined from petroleum occupy a case in the center aisle. They range in use from burning and lubricating to medicinal oils. The great variety of uses of paraffin in the manufacture of familiar objects of everyday utility is illustrated by many specimens. The uses shown range from waterproofed clothespins and shotgun shells to flowers for women's hats, chewing gum and candles. With these familiar derivatives and uses of petroleum products are shown other important products and uses which are not so well known.

Near the center of the hall, the leading varieties of coal are shown in a series of cases, and there are also exhibited specimens of coal from many of the most important coal fields of the world. A complete vertical section of a coal seam, five feet thick, shows the appearance of the coal before it is mined. The source of coal is illustrated by a stump of a tree from a forest of the time of the coal formation, and the origin of coal and the relation of the several kinds to each other are shown by a synoptic collection. Accompanying the coal collection is a case showing the numerous substances obtained as by-products from coal. The products shown are obtained by the gas company of the city of London, England, in the manufacture of illuminating gas. Although this case necessarily contains only a few of the thousands of coal by-products, the diversity and the brilliant colors of those shown make it well worthy of attention. In the adjoining case is a less highly colored but interesting series of the more important coal by-products obtained in this country. A synoptic collection illustrates the kinds of mineral fuels and some of their relations. Adjoining the coal collections are cases containing oil shales and specimens illustrating important uses of asphalt.

In the center aisle is a case containing diamonds and specimens of rock in which diamonds are found, as well as specimens of the minerals associated with diamonds. Two cases illustrate the occurrence and uses of peat. These demonstrate that peat may be used for many purposes besides fuel. In a near-by case a model of a lake in which peat is forming illustrates the subject in great detail. The subject is further illustrated by a collection of the products of a single bog which shows the transition from rushes and reeds at the surface through beds of peat of varying aspect to the most completely formed peat at the bottom of the bog.

A collection of graphite contains numerous specimens illustrating the uses of this mineral. Of general interest also is a group of specimens showing all stages in the manufacture of the common lead-pencil. Sulphur from many parts of the world is shown in another case which also contains specimens of the minerals which are exploited for magnesia.

The west end of the hall is occupied by exhibits of clays, soils, sands and other earthy materials. Two cases are devoted to specimens which show how soil is formed, of what it is composed, the plant foods it contains and the nature of the several kinds of soils, such as loams and marls, which are ordinarily recognized by farmers.

In the large clay collection, the clays are arranged according to kind. As most clays are used in the form of brick, tile, pottery or other burned ware, there appears with most of the specimens a little brick burned from the specimen itself. The manufacture of common brick is illustrated by a large model of a brickyard which shows all stages of the manufacture from digging the clay to loading the finished brick on freight cars. There are also shown collections of clay-like and earthy minerals of industrial importance. These include fuller's earths, bentonites, cement rocks and mineral pigments. A collection filling three cases illustrates the uses of silica. It includes ornamental and gem varieties, such well-known substances as the common plastering and building sands, such comparatively little known things as a flask for chemical use blown from pure, melted quartz, and a specimen of smoky quartz which the Chinese make into dark spectacles. The manufacture of portland cement is illustrated by a large and elaborate model of a modern plant. Full details of the work are represented, from the mining of the constituent limestone and clay to the storing of the completed product.

Hall 37: Frederick J. V. Skiff Hall. Ores, Marbles and Alkalies.—The east half of the hall is occupied by a collection of ores of the precious and base metals. The ores of each metal are grouped separately, except that gold, silver and lead ores are shown together. Under each group the specimens are arranged in geographical order according to country, state and mining district. In a case against the east wall, examples of those minerals which are frequently mistaken for gold are shown, and with them, for comparison, gold from a variety of occurrences. Interspersed with the groups of ores are models which illustrate the methods of mining and treating ores of the more important metals. Among these a model of a gold mine

shows ordinary methods of mining vein ores. Treatment of gold ore for extracting the gold is illustrated by two models, one of a stamp mill, the other of a simple form of cyanide plant. A model of a lead blast-furnace illustrates one common method of extracting lead and silver from the ore. A model of an iron blast-furnace and its accessories, partly in section, illustrates the fundamental process in the metallurgy of iron. With this model are shown models of two furnaces which illustrate the simple methods of iron smelting used in earlier times or by primitive peoples. One of the usual treatments for separating ore of any kind from admixed rock is shown by a model of a jig. With many of the lesser known metals, and some others, are placed small collections which illustrate the utilization of these substances. The uses of the rare metals are especially illustrated in this way. To this collection has been added a series of those minerals which have been found useful in radio communication.

As the small specimens of which most of the ore collection is composed do not show sufficiently well the appearance of ore in mass, several large specimens of various ores have been placed in individual cases. Near the center of the room a collection of native coppers in a separate case merits attention.

In the west part of the hall are fifteen cases filled with marbles and other ornamental stones from many parts of the world. The specimens are large enough to display to advantage the characteristic patterns of each variety.

Building stones in the form of four-inch cubes fill five cases, and there is a case containing some of the brilliant blue and green copper minerals used for ornamental purposes. Collections of industrially important non-metallic minerals occupy the west end of the hall. These include barite, fluorite, asbestos, mica, phosphates, grinding and polishing materials, gypsum and borax. Included in the gypsum collection is a case which shows in synoptic form the great variety of uses of this mineral. At the end of this hall are placed soda and potash collections, including a large group of the Stassfurt potash salts.

Hall 38: Ernest R. Graham Hall. Fossil Animals and Plants.—Fossils here exhibited consist of the remains of plant and animal life which have been preserved in the earth by natural agencies. They include specimens turned to stone by petrifaction, specimens preserved in bogs by the antiseptic action of bog-acids, specimens preserved by being saturated with asphaltum, and natural casts, molds and tracks. An introductory case at the south end of the hall gives a comparison between fossil and recent forms of life of similar kinds.

The collections are arranged in the order of their geological sequence. At the south end of the hall may be found examples of the oldest known fossils and progressing to the northward the series of fossils represent the plants and animals characteristic of the successive geological periods. Fossils of the latest geological period will be found at the north end of the hall. Above the cases, a series of twenty-eight mural paintings extends entirely around the hall. These murals illustrate characteristic scenes and prominent plants and animals of

the geological periods. The paintings, in order, beginning with the earliest period, represent the following: The Cooling Earth, The Beginnings of Life, A Sea Beach of Ordovician Time, A Coral Reef of Silurian Time, A Forest of Devonian Time, North American Reptiles of Permian Time, African Reptiles of Permian Time, Small Flying Reptiles and Birds of Jurassic Time, Large Flying and Marine Reptiles of Jurassic Time, Swimming Reptiles, An Armored Dinosaur, A Plant-eating Dinosaur, Horned and Carnivorous Dinosaurs, Egg-laying Dinosaurs, Duck-bill and Crested Dinosaurs, Four-toed Horse and Primitive Hoofed Beast, Titanotheres, Primitive Whales, Early Camels and Suillines, Early Elephants and Rhinoceroses, Giant Kangaroos and Wombats, New Zealand Moas, South American Ground Sloths and Armadillos, Saber-tooth Tigers and Vultures, Mastodons, Cave Bears, Mammoths and Woolly Rhinoceroses, The Great Irish Deer.

Turning to the fossil exhibits, the life of the Cambrian, or earliest period of known life, is represented by an extensive series of trilobites, fossil jelly-fish, seaweeds and the controverted fossil, *Eozoon canadense.*

The Ordovician series includes a slab containing remains of the earliest fishes, a number of large fossil trilobites and various brachiopods and cephalopods.

From the Silurian Period there are exhibited fossils of great crustaceans, both straight and coiled cephalopods, corals, crinoids and seaweeds.

The Devonian fossils shown include those of fishes, starfishes, sponges, corals and a variety of other invertebrate animals.

Fossils of the Carboniferous Period include a number of trunks, stumps, roots and branches of the large trees, Lepidodendron and Sigillaria; a series of the great "horse-tail" rushes or Calamites, and leaves or branches of various fossil ferns. Life-size restorations of many of these are shown in a large group at the south end of the hall, where a reproduction of a portion of a forest of the period as it appeared in living form, has been constructed. This is by far the most accurate and extensive reproduction of the trees of the Coal Period ever made.

The Permian Period is represented by fossil leaves of conifers and tree-ferns and by remains of fishes, amphibians and reptiles.

The Triassic Period fossils exhibited include fishes from South Africa, tracks of reptiles from Massachusetts, various fossil plants and shells from Germany and a series of fossil cones and branches of trees related to the South American pine, from Patagonia.

Fossils of the Jurassic Period shown include a choice series of skulls and skeletons of fish-lizards from England and from Germany. One of the latter shows also the outline of the body of the animal. A beautifully preserved fossil crocodile, ten feet in length, is also shown. Further, there are a large series of fossil fishes, mostly from Bavaria; a few specimens of the rare flying reptiles; and a comprehensive series of fossil crustaceans, cuttlefish, crinoids, sponges and other invertebrate animals. There are also some fossils of the plants known as cycads.

Of the Comanchian Period a skeleton of the great dinosaur, *Apatosaurus*, occupies a dominating position in the center of the hall. Parts of other dinosaurs from both North and South America are exhibited on pedestals or occupy adjacent cases. A series of miniature models, designed to represent these animals in life, is exhibited near-by.

The Cretaceous Period fossils exhibited include a skull of the great horned dinosaur, *Triceratops*, which occupies a floor case; a lesser skull with nest of eggs, belonging to the related Mongolian dinosaur, *Protoceratops;* parts of skeletons of the swimming reptiles, *Platecarpus* and *Elasmosaurus;* a shell of the great land tortoise, *Basilemys*, and a skeleton of the slender, flying reptile, *Nyctosaurus*. A fossil tree trunk from Alberta, and a series of fossil leaves from Kansas, are among the fossil plants shown. A group of great fossil sponges, various types of fossil mollusks and a series of models of shells of the chalk-forming animals, illustrate the invertebrate life of the period.

With the next period, the Eocene, the Age of Mammals begins. Fossils of this period shown include a skeleton of one of the smaller titanotheres, *Dolichorhinus*, an extensive series of skulls of other Uinta mammals, and contemporary specimens of crocodiles and turtles. In another upright case may be seen a series of fossil fishes, each one encased in its matrix of stone. Various fossil shells, insects, palms and other Eocene plants are included in the series.

These are followed by fossils of the Oligocene Period. Most conspicuous among them are two mounted skeletons and a series of skulls of some of the great titanotheres—an extinct family of hoofed mammals whose members had the general proportions of the rhinoceros, but differed from that animal in the structure of skull and of foot. The titanotheres are further illustrated by a group at the north end of the hall, where a male, female and young are reproduced in life size and bodily form. The *Mesohippus* or three-toed horse of this period is also illustrated by a group placed at the north end of the hall adjoining the titanotheres. Six individuals in life size are shown in this group. A skeleton of a small saber-tooth tiger and skulls and skeletons of a variety of extinct rhinoceroses, tapirs, wolves and animals of less familiar names, further illustrate mammals of this period. In one slab in a table case are remains of more than twenty individuals of a member of the deer family known as *Leptomeryx*.

Conspicuous among the exhibits of the next period, the Miocene, is the slender skeleton of a fossil North American camel. Other specimens include skeletons of the pig-like oreodonts, of extinct flesh-eaters and of rodents; and skulls and legs of a great variety of extinct rhinoceroses, horses, camels, wolves, mustellines and other less familiar kinds of extinct species. An immense fossil pair of jaws with huge teeth illustrates the size of a great, extinct species of shark. A series of large, spiral fossils designated as "Daemonelix" shows what are probably the natural casts of an extinct plant.

The remainder of the hall is devoted to fossils of the Pliocene, Pleistocene and Recent Periods. Being of more recent occurrence, these fossils are preserved in greater variety and completeness than those of earlier times. Among them may be seen complete skeletons

of the Mammoth and Mastodon, of the Irish Deer, of two of the great ground sloths of South America, of the huge armadillo-like *Glyptodon*, also from South America, of the cave bear of Europe and of the saber-tooth tiger and wolf of the Los Angeles tar-beds. There is also to be seen a life-size reproduction of the great moa of New Zealand, an ostrich-like bird which sometimes reached a height of twelve feet. Many less complete skeletons, skulls, teeth, tusks and other remains are representative of the life of many other animals of this period. Among the specimens is the skull of a cave man accompanied by a stone lamp and other utensils, all partially embedded in a stony cave deposit. Furnishing a climax to the series and illustrating the arrival of Man in the geological succession, there is shown a full-size reproduction of a cave man of the Neanderthal race with members of his family and the rock shelter in which they lived.

DEPARTMENT OF ZOOLOGY

First Floor:—Halls 13, 15–22

Ground Floor:—Hall N

First Floor

Hall 13: George M. Pullman Hall. Horned and Hoofed Mammals.—This hall, which runs north and south, and is immediately west of Stanley Field Hall, is devoted to horned and hoofed mammals—game animals from all parts of the world. Included are various representatives of the deer family, the antelopes, gazelles, wild sheep, goats, and oxen. In a case near the center of the hall are shown some of the smaller hoofed animals, the dik dik, musk deer, mouse deer and others. Of special interest are the rare giraffe-like okapi, and the European red deer, shown in cases near the north end of the hall; and in the southern end a case with a series of American mountain sheep.

Hall 15: Mammals—Systematic.—This hall is at the right of the main or north entrance to the Museum, and is entered by passing through the north end of Pullman Hall. With the exception of those represented in Pullman Hall, it contains members of the principal groups of mammals of the world, arranged, so far as practicable, according to their relationships. At the east end of the hall are certain hoofed animals related to those in Pullman Hall, such as zebras, tapirs, llamas, and wild pigs. Beginning then with the lower forms, the monotremes or egg-laying mammals of Australia and the pouched mammals or marsupials, there are shown successively various groups, such as rodents, edentates (sloths, anteaters, etc.), fur-bearing mammals, the cat family, and the dog family, terminating with the highest mammals, the monkeys and man-like apes. On the north side two cases contain a noteworthy series of North American cats, and black bears and their allies. In the east end of the hall are life-size reproductions of a hippopotamus and of a white rhinoceros of Africa. These are made in cellulose-acetate by a process originated and developed in Field Museum. More lifelike results are obtained by this method than by mounting the skins of animals of this type.

Hall 16: American Mammals—Habitat Groups.—Hall 16 contains habitat groups of North American mammals. Flanking the entrance at the east end of the hall are groups of Rocky Mountain goats and Stone's mountain sheep, both of which are also seen from Pullman Hall. Thence eastward are four groups of the Virginia deer showing the difference in its appearance and habits in the four seasons. These are followed by groups of the American pronghorn antelope, mule deer, Olympic elk, Alaska moose, grizzly bear, and glacier bear. In the western half of this hall are further American groups, including the Alaska brown bear, polar bear, musk-ox, bison, and beaver.

These are followed by groups of some of the more important mammals of South America, the guanaco, tapir, great ant-eater, and marsh deer. Finally, opposite the North American beaver group, is a group of capybara and jaguar represented in a tropical jungle.

Hall 17: William V. Kelley Hall. Asiatic Mammals—Habitat Groups.—In the east half of this hall are some striking habitat groups of Asiatic mammals forming part of an extensive series intended to occupy the entire hall. Among those completed are Marco Polo's sheep, Asiatic ibex and Indian rhinoceros. The large male ibex, a specimen shot by Kermit Roosevelt while acting as one of the leaders of a Museum expedition, has horns of record size (59½ inches).

A group of the very rare giant panda, showing two animals in a setting of bamboo and mountain forest in western China, is another feature of this hall. The panda specimens were obtained by Colonel Theodore Roosevelt and Kermit Roosevelt.

In the alcove south of the entrance to this hall is a case devoted to mammals of the Chicago area.

Hall 18: Albert W. Harris Hall. Fishes, Reptiles and Amphibians.—The east half of this hall is devoted to fishes and the west half to reptiles and amphibians.

The fishes are arranged in two series, one showing representatives of the principal orders and families of fishes, and the other showing special collections of Atlantic and Pacific food and game fishes, and also Chicago market fishes. In the west end of the hall is displayed temporarily a habitat group with a swordfish, shark and rays; and two habitat groups illustrate the insect life of the Indiana dunes and the life history of the tomato worm moth.

The collection of reptiles includes representatives of the lizards, snakes, turtles, and crocodiles. Of particular interest are amphibians and reptiles reproduced in celluloid. Noteworthy among these is a South American anaconda installed in a natural setting, the so-called dragon lizard of Komodo, and a reticulated python shown coiled about its eggs. A habitat group of American crocodiles, temporarily detached from exhibits of other reptiles, may be seen in the alcove at the side of the west entrance to Hall 19.

Hall 19: Osteology—Skeletons.—Contains skeletons of the principal vertebrates or backboned animals. These include fishes, frogs and their relatives, birds, and mammals. At the right of the east entrance are the lower forms, fishes, etc., and at the left are the higher apes and man. In the center toward the west end is the huge

skeleton of a right whale. Of particular interest among the bird skeletons is an assembled skeleton of the extinct great auk. On the southeast wall of the hall is a case containing skeletons of man, gorilla, chimpanzee, and orang arranged for comparative study.

In the alcove flanking the west entrance to the hall is a habitat group of American crocodiles in which the animals are reproduced in cellulose-acetate, a material resembling celluloid.

Hall 20: Birds—Habitat Groups.—Eighteen bird groups with painted backgrounds are shown, mostly in large sectional cases with four groups to each case. The majority of the groups are of North American birds, conspicuous among which are the northern loon, golden eagle, California condor, whooping crane, wild turkey, white pelican, and ruffed grouse. Near the west end of the hall is a large case containing four groups from tropical America and including the flamingo, the jabiru stork, horned screamer, scarlet ibis, and oil bird or guacharo. At the extreme west end of the hall is a group of Alaska water birds from the Pribilof Islands, and a group of albatrosses and other mid-Pacific birds from the island of Laysan.

Hall 21: Birds—Systematic.—A systematically arranged collection of birds including representatives of the more important orders and families. Cases on the north side of the hall are devoted to North American birds, and those on the south side to birds of foreign countries. The North American series, especially, is undergoing revision by which the birds are being arranged on natural perches or bases instead of on shelves. Among the groups for which the new installation is completed are the diving birds, gulls, terns, shorebirds, ducks, hawks, owls, and woodpeckers. Species known to occur in the state of Illinois are marked with a red star. In the alcove north of the entrance to this hall is a case of albino birds and mammals.

Hall 22: Carl E. Akeley Memorial Hall. African Game Animals. Habitat Groups.—This, the largest hall devoted to zoology, occupies the entire west end of the building and is divided in the middle by the stairway leading to the west door and the James Simpson Theatre. North of the stairway are groups of large African mammals—koodoos, zebras, buffaloes, and various antelopes. In the north end also are a group of Abyssinian dassies or coneys, small animals resembling rodents but related to the hoofed mammals, and a group of the diminutive antelopes known as the dik diks. On the other side of the stairs are other African antelopes including a group of mountain nyala. In temporary position in this hall are a family of gorillas next to the central west wall, and two groups of orangs and proboscis monkeys from the East Indies. At the south end of the hall a very large group showing various large mammals gathered at a water hole is in course of preparation.

Ground Floor

Hall N: Marine Mammals.—This hall, devoted to habitat groups of marine mammals, although still in course of preparation, has been opened to the public so that two large groups thus far installed may be seen. One of these shows the California or Steller's sea lions, and the other the Pacific walrus.

H. N. HIGINBOTHAM HALL

Hall 31: Gems and Jewels.—Second floor at head of staircase leading from the south end of Stanley Field Hall.

This hall contains a large and very valuable collection of gems and jewels. There are shown many examples of nearly every known gem, represented both by cut and uncut specimens. Many of the specimens are of historic interest and of high intrinsic value. Attention may be called especially to the DeVrees engraved diamond, the Hope, Tiffany and Crane aquamarines, the Russian topazes, the series of cut amethysts and the Sun God opal.

In the series of diamonds there are shown, besides the engraved diamond already mentioned, four cut stones and rough diamonds from nearly all the important fields of the world. Emeralds are illustrated by crystals from Colombia, Russia and Brazil. There is a fine series of star sapphires, and both blue and yellow sapphires are represented by large and attractive stones, the largest weighing ninety-nine and one-half carats.

The Crane aquamarine, weighing 341 carats, and several other cut aquamarines of exceptional quality and size, illustrate this variety of beryl in unusual completeness and beauty. Gem topaz, both cut and rough, is illustrated in a variety of colors. Blue, yellow, rose and colorless stones are shown, the finest being the Crane rose topaz of ninety-seven carats. A transparent, nearly colorless crystal of topaz from Brazil, weighing ninety pounds, is also included in the series. Tourmaline, zircon, garnet and peridot are other gem minerals well represented by cut and rough stones. Many cut and crystallized amethysts from Brazil and other countries show the rich, dark-purple color and other qualities of this stone at its best. A bowl, nine inches in diameter, cut from one piece of rose quartz, is noteworthy for its rich color and size.

Precious opal is illustrated in a wide variety of colors from all the important fields of the world. Besides the Sun God opal, previously mentioned, some exquisite specimens of black opal are worthy of special notice in the series.

Several crystal balls and various carvings of rock crystal, some of which are of historic interest, illustrate the ornamental and other uses of this semi-precious stone. Many other semi-precious stones are illustrated in the collection both by cut and rough specimens. Gold and platinum are represented by nuggets and other specimens showing modes of occurrence of these metals in nature.

Nine cases in the hall are installed with mounted gems or with worked forms of gold, representing the use of these materials in jewelry among primitive and oriental peoples in both early and later times. Here are to be seen a large number of examples of pre-Columbian gold ornaments from South America, of Egyptian and classical jewelry, and of jewelry from India and Algeria. Babylonian, Roman and Italian cameos and intaglios are also represented by many choice examples.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION DEPARTMENT

The N. W. Harris Public School Extension Department prepares small portable cases of natural history and economic exhibits, and lends them to the schools of Chicago.

This service was made possible by the late Norman Wait Harris, who in 1911 provided an endowment of $250,000. This endowment was supplemented in 1919 by a contribution of $25,000 from members of Mr. Harris's family, and in 1923 by $100,000 given by his son, Albert W. Harris.

Approximately 1,200 cases are at present available for this educational work. Other cases are being prepared. During the school year two cases are sent to each school every two weeks. Deliveries and collections are made by special motor trucks.

Examples of these cases are exhibited in Stanley Field Hall.

THE JAMES NELSON AND ANNA LOUISE RAYMOND FOUNDATION FOR PUBLIC SCHOOL AND CHILDREN'S LECTURES

Various educational activities for school children of Chicago are provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures. An endowment of $500,000 was provided for this purpose in 1925 by Mrs. Anna Louise Raymond.

During the spring, summer and autumn the Foundation provides series of programs consisting of educational motion pictures, lectures, and story hours. These programs are presented in the James Simpson Theatre of the Museum. During the school year members of the Raymond Foundation staff are sent to the public schools of Chicago to give illustrated lectures. As many as 500 such lectures are given during a year. Throughout the year, classes of children from both elementary and high schools, and other groups from community centers and other organizations, are conducted on tours of the Museum exhibits by Raymond Foundation lecturers. By arrangement with the Board of Education of Chicago, a correlation of Museum exhibits with the curriculum prescribed for the schools has been effected, whereby teachers and children on visits to the Museum study exhibits having a direct bearing on their current classroom work. Raymond Foundation lecturers assist these groups.

GENERAL MUSEUM INFORMATION

Location

Field Museum is located in Grant Park near Lake Michigan, the main entrance facing Roosevelt Road. Regular service direct to the entrance is maintained by the Jackson Boulevard busses (No. 26) of the Chicago Motor Coach Company, with free transfers to and from all other lines of the company. The Illinois Central main and

suburban station is only two blocks from the Museum. Surface cars, elevated lines, and interurban lines provide transportation to within a few blocks of the Museum. There are excellent drives for automobiles, and ample free parking space.

Hours and Rules of Admission

The Museum is open to the public during the following hours:

November, December, January	**9:00 a.m. to 4:30 p.m.**
February, March, April, October	**9:00 a.m. to 5:00 p.m.**
May, June, July, August, September	**9:00 a.m. to 6:00 p.m.**

On Thursdays, Saturdays and Sundays admission is free. On other days an admission fee of 25 cents is charged to adults. No return admission checks are issued.

Children are admitted free on all days. Students and members of the faculty of any university, college, school or institute are admitted free upon presentation of proper credentials.

Checking

Canes, umbrellas and parcels must be checked at the entrances. Coats may also be checked. A fee of 5 cents is charged for this service.

Telephones

Public telephones will be found to the west of the main (north door) entrance.

Wheel Chairs

Visitors desiring the use of wheel chairs may obtain them at the main (north door) entrance. A fee of 25 cents per hour is charged for chairs, and attendants must be furnished by the applicants. A deposit of $1 is required on each chair.

The Library

The Museum Library is open for reference daily, except Sunday. The Library contains approximately 93,000 volumes.

Information

Information concerning the Museum may be secured at the main (north door) entrance where the publications of the Museum and picture post cards are sold. Copies of many photographs made by the Museum photographer are also on sale there.

Lunch Rooms

There is a cafeteria on the ground floor where meals and refreshments may be obtained after 11 A.M. daily. Accommodations are provided near the cafeteria for school children and parties who provide their own lunches.

Special Privileges

Permission for sketching and photographing in the Museum may be obtained upon application to the Director.

The Research Collections and Laboratories, which are on the third floor, are not open to the public, but may be visited by students, specialists, and Members of the Museum upon application to the Director and with the approval of the Curators.

Museum Tours and Guide Service

At 11 A.M. and 3 P.M., on Monday, Tuesday, Wednesday, Thursday and Friday of each week, guide-lecturers conduct tours through various sections of the Museum. Thursday tours are general; other days special subjects are covered according to a schedule, copies of which may be obtained at the north entrance or by mail on request. Each tour lasts about an hour and may be taken, without charge, by any Museum visitor.

The services of a guide-lecturer may also be engaged, without charge, by clubs, conventions, classes from public, parochial and private schools, or other parties of ten or more individuals. Written application for this service should be made to the Director of the Museum at least a week in advance of the intended visit.

Lectures

Courses of free illustrated lectures on science and travel are given for the public on Saturday afternoons during the spring and autumn months, in the James Simpson Theatre on the ground floor of the Museum. Men prominent in the fields of exploration and research are engaged for these lectures. Both motion pictures and colored stereopticon slides are used to illustrate them. Special lectures are given from time to time, and there is a series for Members of the Museum each year. Other lectures by members of the Museum's scientific staff are frequently broadcast by various radio stations. Occasionally Americanization programs are presented for the foreign-born.

Membership

Field Museum has several classes of Members. Benefactors give or devise $100,000 or more. Contributors give or devise $1,000 to $100,000. Life Members give $500. Non-Resident (Life) and Associate Members pay $100. Non-Resident Associate Members pay $50. All the above classes are exempt from dues. Sustaining Members contribute $25 annually. After six years they become Associate Members. Annual Members contribute $10 annually. Other memberships are Honorary, Patron, Corresponding and Corporate, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to *Field Museum News*, a monthly bulletin, is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

Sets of Post Cards

Field Museum has published thirty-seven sets of post cards illustrating subjects represented in the exhibits of the Departments of Anthropology, Geology, Zoology, and the N. W. Harris Public School Extension. These cards are printed by the photogravure process, and each one contains a brief text. The sets are in special envelopes prepared for convenience in mailing, but they also may be mailed as individual post cards if desired. They are suitable, too, for mounting in albums, and can thus be made into a pictorial natural history library. For children they are especially valuable.

Following is a list of the sets with subjects, number of cards in each, and price:

ANTHROPOLOGY

Numbers and subjects of sets		Cards in sets	Price
1.	Archaic Bronzes, China	16	$ .30
2.	Sung Bronze Vases, China	10	.20
3.	Bronze Figures, China	15	.30
4.	Ancient Pottery, China	14	.30
5.	Mortuary Clay Figures. *a*. Human Figures, China	10	.20
6.	Mortuary Clay Figures. *b*. Animal Figures, China	14	.30
7.	Buddhist Sculpture, Buddhas, China	7	.15
8.	Buddhist Sculpture, Bodhisatvas, China	14	.30
9.	Buddhist Sculpture, Monks, China	6	.10
10.	Buddhist and Taoist Sculptures, China	10	.20
11.	Imperial Costumes, China	6	.10
12.	Actors' Costumes, China	8	.15
13.	Lama Mystery-play, Tibet	13	.30
14.	Folk Costumes, Tibet	10	.20
15.	Buddhistic Sculpture, India	14	.30
16.	Ancient Sculpture, Mexico	8	.15
17.	Ancient Pottery, Peru	15	.30
18.	Drums, Daggers, Bags, etc., New Britain and New Guinea	11	.20
19.	Household Utensils, Admiralty Islands and New Guinea	10	.20
20.	Human and Animal Figures, New Guinea	10	.20
21.	Ceremonial Masks, New Guinea and New Hebrides	8	.15
22.	Malagan Figures and Masks, New Ireland	10	.20
23.	Wooden Masks, New Guinea and New Britain	10	.20
24.	Prepared Human Heads, New Guinea and New Hebrides	8	.15
25.	Alabaster Jars, Egypt	12	.25
26.	Bronzes and Ivory Carvings, Benin, West Africa	12	.25
27.	Medicine-man, Wooden Masks, etc., Cameroon, West Africa	8	.15

GEOLOGY

Numbers and subjects of sets	Cards in sets	Price
1. Restorations of Ancient Landscapes, Plants and Animals	14	.30
2. Neanderthal (Mousterian) Man	10	.20
3. The Mesohippus	6	.10

ZOOLOGY

1. Apes and Monkeys	8	.15
2. Interesting Large Rodents	7	.15
3. Marsupials, or Pouched Mammals	8	.15
4. Tarantulas, Centipedes and Scorpions	10	.20
5. Skates and Rays of American Waters	10	.20
6. Common American Moths	10	.20
7. Common Illinois Butterflies	20	.40

N. W. HARRIS EXTENSION

1. Types of cases loaned to Chicago schools	7	.15

Post card sets on other subjects will be added to these series from time to time.

Other Post Cards and Pictures

Post cards of miscellaneous subjects selected from among the Museum exhibits are available. Two for 5 cents.

School children's card sets consisting of twenty photogravure cards 3 ½″x 5½″, and containing descriptive texts. 20 cents.

Antiquities of ancient Ireland—ten photogravures, 6″x 9″. 5 cents.

Field Museum album—contains ten cabinet views 5½″ x 7″ and ten photogravure post cards. 50 cents.

Miniature set—ten interior and exterior views of Field Museum of Natural History. Cards 1¾″ x 3½″. 10 cents.

The work of Carl E. Akeley in Field Museum—forty-seven photogravures of mounted animals and sculpture. Plates are 9″ x 12″, and packed in carton. $1.

Abyssinian Birds and Mammals, from paintings by Louis Agassiz Fuertes. 32 colored plates, 10″ x 12″, of birds and mammals, packed in carton. $3. In de luxe cover $5.

Large size photographs of most of the outstanding exhibits are available at $1 per print.

All of the post cards, pictures, albums, etc., may be obtained at the information desk at the main or north entrance of the Museum.

BEQUESTS

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. They may, if desired, take the form of a memorial to a person or cause, to be named by the giver. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to Field Museum of Natural History of the City of Chicago, State of Illinois,_____

_____

_____

_____

_____

Cash contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15% of the taxpayer's net income are allowable as deductions in computing net income under the Revenue Law.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron during his or her lifetime. These annuities are tax-free and are guaranteed against fluctuation in amount.